



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,737	11/21/2003	Thomas A. Gates	D0932-00319 [VS-8747]	3542

8933 7590 02/09/2005

DUANE MORRIS, LLP  
IP DEPARTMENT  
ONE LIBERTY PLACE  
PHILADELPHIA, PA 19103-7396

EXAMINER

SORKIN, DAVID L

ART UNIT	PAPER NUMBER
----------	--------------

1723

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/719,737	Applicant(s) GATES ET AL	
	Examiner David L. Sorkin	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-20 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>21 November 2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 7, 8, 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Woodruff (US 485,854). Regarding claim 1, Woodruff ('854) discloses a screw tip for an extruder screw comprising a substantially conical outer surface (that of D, see Figs. 1, 3 and 4); and at least one discontinuous fin (b,c,d,e and/or f) protruding from the outside surface of the screw tip. Regarding claim 2, the tip includes a tip portion and an attachment portion, and the fin extends substantially from a base of the tip portion to an apex of the tip portion (see Figs. 1, 3 and 4). Regarding claim 3, each fin includes at least one slot which divides the fin into fin components (see Figs. 1 and 3-6). Regarding claim 4, the slots have a taper angle which forms a narrowing channel (see Fig. 4). Regarding claim 7, the outer surface is smooth (see drawings). Regarding claim 8, the fin has a curved sidewall portion (see drawings). Regarding claim 10, the outside surface of the screw tip has a slope of less than thirty degrees (See Figs. 1 and 3). Regarding claim 11, each fin has a helical shape (see page 2, line 3). Regarding claim 13, Woodruff ('854) discloses an extruder comprising a hollow barrel (A and optionally C) defining a feed channel; at least one extruder screw (an upstream portion of D including a); and at least one screw tip (the remainder of D including f and optional

Art Unit: 1723

b,c,d and e) and having at least one discontinuous fin (b,c,d,e and/or f) extending from a substantially conical surface. Regarding claim 14, the fin includes at least one slot which divides the fin into components (see Figs. 1 and 3-6).

3. Claims 1-3, 7, 10 and 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Parks (US 3,555,616). Regarding claim 1, Parks ('616) discloses a screw tip (21) comprising a substantially conical outside surface and at least one discontinuous fin protruding from the outer surface (see Fig. 1). Regarding claim 2, the screw tip includes a tip portion and an attachment portion, wherein the fin extends substantially from a base of the tip to an apex of the tip portion (see Fig. 1). Regarding claim 3, each fin includes at least one slot which divides the fin into fin components (see Fig. 1). Regarding claim 7, the outer surface is smooth (see Figs. 1 and 5). Regarding claim 10, the outside surface of the screw top has a slope of less than thirty degrees from the base portion of the screw tip to an apex (see Fig. 5). Regarding claim 12, each fin is straight (see Fig. 1). Regarding claim 13, Parks ('616) discloses an extruder comprising a hollow barrel (10) defining a feed channel (11); an extruder screw (see col. 2, lines 40-41; Fig. 1); and a screw tip (21) coaxially mounted on the screw and having at least one discontinuous fin extending from a substantially conical outside surface (see Fig. 1). Regarding claim 14, the fin includes at least one slot which divides the fin into fin components (see Fig. 1). Regarding claim 15, Parks ('616) discloses an extrusion process of the type by which a polymeric material is fed by a screw mixer through a feed channel (11) to a die (see col. 1, lines 23-45) comprising mixing a molten material with a rotating screw tip (21) having a plurality of fins protruding from a

Art Unit: 1723

substantially conical outside surface of the screw tip, at least one of said fins being discontinuous (see Fig. 1). Regarding claim 16, the molten material, is advanced through an adapter which encloses the screw tip (see Fig. 1). Regarding claim 17, the molten material is mixed by at least one slot on the fins (see Fig. 1). Regarding claims 18 and 19 said molten material is subsequently formed into a pipe (see col. 1, line 57).

4. Claims 1-3, 7, 8, 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by (US 3,902,850). Regarding claim 1, Lehnert ('850) discloses a screw tip for an extruder screw comprising a substantially conical outer surface (that of 14, see Figs. 2 and 4); and at least one discontinuous fin (a subset of 70) protruding from the outside surface of the screw tip. Regarding claim 2, the tip includes a tip portion and an attachment portion, and the fin extends substantially from a base of the tip portion to an apex of the tip portion (see Figs. 1, 2 and 4). Regarding claim 3, each fin includes at least one slot which divides the fin into fin components (see Figs. 1, 2 and 4).

Regarding claim 7, the outer surface is smooth (see Figs. 1, 2 and 4). Regarding claim 8, the fin has a curved sidewall portion (see Fig. 1). Regarding claim 10, the outside surface of the screw tip has a slope of less than thirty degrees (see Fig. 2). Regarding claim 11, the fin is helical (see col. 4, lines 8-12). Regarding claim 13, Lehnert ('850) discloses an extruder comprising a hollow barrel (12) defining a feed channel; at least one extruder screw (an upper portion of 14 as seen in Fig. 2)); and at least one screw tip (the remainder of 14) and having at least one discontinuous fin (a subset of 70) extending from a substantially conical surface. Regarding claim 14, the fin includes at least one slot which divides the fin into components (see Figs. 1, 2 and 4).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehnert (US 3,902,850). The device of Lehnert ('850) was discussed above with regard to claim 3. The numerical values of claims 5 and 6 are not explicitly disclosed.

However, in col. 5 lines 28-42 it is states "Specific dimensional relations in respect to the fin and groove configuration of the rotor will of course be dependent upon rotor speed, chemical composition of the mix and its viscosity...". Therefor it would have been obvious to one of ordinary skill in the art to have selected optimal or workable values for these recognized result effective variables.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parks (US 3,555,616) as applied to claim 15 above, and further in view of Gray (US 2,622,469). While Parks further discloses the material being thermoplastic (see title), particular thermoplastics are not discussed. Of course the claimed thermoplastics are the most notoriously well known and would be immediately suggested to one of ordinary skill simply by the word thermoplastic; however, Gray ('469) is cited as teaching that polyethylene and polyvinyl chloride are thermoplastics suitable for screw extrusion (see col. 1, lines 1-26).

***Allowable Subject Matter***

8. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 571-272-1148. The examiner can normally be reached on 9:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/719,737

Page 7

Art Unit: 1723

A handwritten signature in black ink, appearing to read "David L. Sorkin".

David L. Sorkin  
Primary Examiner  
Art Unit 1723

DLS